Course Outline: Animal Science Semester 1

CD: Animal, Plant & Soil Science - Revised							
Lesson Number and Title		Agricultural Standard(s)	Academic Standard(s)	CC Math	CC English	CC Science	Days of study 1day = 1.5 hours
UNIT B. INTRODUCTION TO PLANT & ANIMAL SCIENCE CONCEPTS							
Problem Area 1. Understanding Taxonomy							
LC: B1-1	Classifying Living Things	AE:B12-3	Sci:F12-5				.5 day
Problem Area 2. Cellular Biology, Genetics, and Biotechnology							
LC: B2-1	Cells	AE:B12-4	Sci:F12-2			9-12 .LS.1.a	1.5days
LC: B2-3	Genetics	AE:B12-4	Sci:F12-4, Sci:F12-4				.5 day
LC: B2-4	Heritability of Traits	AE:B12-4	Sci:F12-3, Sci:F12-4				.5day
UNIT C. ANIMAL SCIENCE AND THE INDUSTRY							
Problem Area 2. Understanding Animal Anatomy and Physiology							
LC: C2-1	Classifying Animals	AE:D12-1	Sci:F12-5				.5 day
LC: C2-2	Anatomy of Animals	AE:D12-1	Sci:F12-5				3 day
LC: C2-3	The Skeletal System	AE:D12-1	Sci:F12-11				2 day
LC: C2-4	The Integumentary, Muscular, and Urinary Systems	AE:D12-1	Sci:F12-11				5
Problem Area 3. Meeting Nutritional Needs of Animals							
LC: C3-1	Nutrients and Their Importance to Animals	AE:D12-4, AE:D12-6	Sci:F12-9, Sci:F12-10, Sci:F12-11				2.5
LC: C3-2	Animal Digestion	AE:D12-4, AE:D12-6	Sci:F12-9, Sci:F12-10, Sci:F12-11				1.5
LC: C3-3	Major Parts of the Digestive System	AE:D12-4, AE:D12-6	Sci:F12-11				3
LC: C3-4	Nutritional Needs of Animals	AE:D12-4, AE:D12-6	Sci:F12-9, Sci:F12-10, Sci:F12-11				1
LC: C3-5	Feedstuffs	AE:D12-4, AE:D12-6	Sci:F12-9, Sci:F12-10, Sci:F12-11				2
LC: C3-6	Balancing Animal Feed Rations	AE:D12-4, AE:D12-6	Sci:F12-9, Sci:F12-10, Sci:F12-11	K-12.MP.4.4			.5
Problem Area 4. Understanding Animal Reproduction							
LC: C4-1	Anatomy and Physiology of Animal Reproductive Systems	AE:D12-4, AE:D12-6	Sci:G12-3				2.5
LC: C4-2	Natural Animal Reproduction	AE:D12-4, AE:D12-6	Sci:F12-6				.5
LC: C4-3	Animal Reproduction	AE:D12-6	Sci:F12-6				.5

	Management						
LC: C4-4	Animal Reproduction Technology	AE:D12-6	Sci:G12-3				2
Problem Area 6. Understanding the Processing and Composition of Red Meat Products							
LC: C6-1	Red Meat Harvesting Methods	AE:D12-4, AE:D12-6	Sci:B12-1				1
LC: C6-2	Meat Product Quality	AE:D12-4, AE:D12-6	Sci:H12-3				1
Problem Area 7. Understanding the Livestock, Large Animal, Poultry, and Bee Industries							
LC: C7-20	Present and Future Trends in the Animal Science Industry	AE:A12-2, AE:D12-6	Sci:D12-3, Sci:D12-4				1
Problem Area 10. Exploring Careers in Animal Science							
LC: C10-1	Career Opportunities in the Animal Science Industry	AE:D12-4, AE:D12-6	Sci:A12-5				7

Lesson Number and Title		Agricultural Standard(s)	Academic Standard(s)	CC Math	CC English	CC Science	Days of instruction 1 day = 1.5 hours
UNIT B. ANIMAL SCIENCE							
Problem Area 1. Animal Genetics and Biotechnology							
LC: B1-1	Animal Genetics and Probability	AE:D12-6	Sci:F12-3, Sci:F12-4, Sci:F12-5, Sci:F12-6				2.5
Problem Area 2. Growth and Development of Animals							
LC: B2-5	Starch Digestion by Enzyme Action	AE:D12-6	Sci:F12-9, Sci:F12-10, Sci:F12-11				.5
LC: B2-6	Protein Digestion by Enzyme Action	AE:D12-6	Sci:F12-9, Sci:F12-10, Sci:F12-11				.5
LC: B2-7	Absorption of Nutrients	AE:D12-4	Sci:F12-9, Sci:F12-10, Sci:F12-11				1.5
LC: B2-9	Growth Hormones in Animals	AE:A12-2	Sci:F12-11				.5
Problem Area 3. Animal Reproduction							
LC: B3-1	Artificial Insemination	AE:B12-4	Sci:F12-3, Sci:F12-4, Sci:F12-5, Sci:F12-6				1
LC: B3-2	Sperm Motility	AE:B12-4	Sci:F12-1, Sci:F12-2				.5

Common Core Math Standards:

Grade	Strand	Broad Standard	Anchor Standard
9-12	9-12.MP - Mathematical Practices	9-12.MP.4 - Model with mathematics.	9-12.MP.4.4 - Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By

			high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

Common Core Science Standards:

Grade	Strand	Broad Standard	Anchor Standard
9-12	9-12.LS - Life Science	9-12.LS.1 - From Molecules to Organisms: Structures and Processes	9-12.LS.1.a - Critically read scientific literature and produce scientific writing and/or oral presentations that communicate howthe structure and function of systems of specialized cells within organisms help perform the essential functions of life

Agricultural Standards Lookup Table:

Core Area	Content Standard	Performance Standard
AE - Agricultural Education	**AE:A** - Global Agricultural Systems	**AE:A12-2** - Understand the variety, complexity, and size of the agricultural industry in the world
AE - Agricultural Education	**AE:B** - Technology/Information	**AE:B12-3** - Use technology to acquire, organize, and communicate information by entering, modifying, retrieving, and storing data
AE - Agricultural Education	**AE:B** - Technology/Information	**AE:B12-4** - Access and use information for a class presentation about the impact of new technologies on the products manufactured and produced; e.g., biotechnology
AE - Agricultural Education	**AE:D** - Agriscience/Production	**AE:D12-1** - Describe the global utilization of Wisconsin's food, fiber, and ornamental plant products

AE - Agricultural Education	**AE:D** - Agriscience/Production	**AE:D12-4** - Explore traditional and nontraditional food, fiber, and ornamental horticultural jobs/careers and identify the necessary skills, aptitudes, and abilities
AE - Agricultural Education	**AE:D** - Agriscience/Production	**AE:D12-6** - Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources

Academic Standards Lookup Table:

Core Area	Content Standard	Performance Standard
Sci - Science	**Sci:A** - Science Connections	**Sci:A12-5** - Show how the ideas and themes of science can be used to make real-life decisions about careers, work places, life-styles, and use of resources
Sci - Science	**Sci:B** - Nature of Science	**Sci:B12-1** - Show how cultures and individuals have contributed to the development of major ideas in the earth and space, life and environmental, and physical sciences
Sci - Science	**Sci:D** - Physical Science	**Sci:D12-3** - Explain* exchanges of energy* in chemical interactions* and exchange of mass and energy in atomic/nuclear reactions
Sci - Science	**Sci:D** - Physical Science	**Sci:D12-4** - Explain* how substances, both simple and complex, interact* with one another to produce new substances
Sci - Science	**Sci:F** - Life and Environmental Science	**Sci:F12-1** - Evaluate the normal structures and the general and special functions of cells in single-celled and multiple-celled organisms
Sci - Science	**Sci:F** - Life and Environmental Science	**Sci:F12-2** - Understand how cells differentiate and how cells are regulated
Sci - Science	**Sci:F** - Life and Environmental Science	**Sci:F12-3** - Explain current scientific ideas and information about the molecular and genetic basis of heredity
Sci - Science	**Sci:F** - Life and Environmental Science	**Sci:F12-4** - State the relationships between functions of the cell and functions of the organism as related to genetics and heredity
Sci - Science	**Sci:F** - Life and Environmental Science	**Sci:F12-5** - Understand the theory of evolution, natural selection, and biological classification
Sci - Science	**Sci:F** - Life and Environmental Science	**Sci:F12-6** - Using concepts of evolution and heredity, account for changes in species and the diversity of species, include the influence of these changes on science, e.g. breeding of plants or animals

Sci - Science	**Sci:F** - Life and Environmental Science	**Sci:F12-9** - Using the science themes, investigate energy systems (related to food chains) to show how energy is stored in food (plants and animals) and how energy is released by digestion and metabolism
Sci - Science	**Sci:F** - Life and Environmental Science	**Sci:F12-10** - Understand the impact of energy on organisms in living systems
Sci - Science	**Sci:F** - Life and Environmental Science	**Sci:F12-11** - Investigate how the complexity and organization of organisms accommodates the need for obtaining, transforming, transporting, releasing, and eliminating the matter and energy* used to sustain an organism
Sci - Science	**Sci:G** - Science Applications	**Sci:G12-3** - Analyze the costs, benefits, or problems resulting from a scientific or technological innovation, including implications for the individual and the community
Sci - Science	**Sci:H** - Science in Personal and Social Perspectives	**Sci:H12-3** - Show how policy decisions in science depend on social values, ethics, beliefs, and time-frames as well as considerations of science and technology